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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,995	12/20/2005	Sigurd Buchholz	CH8368/LeA 35,790	9453

7590 06/20/2008

Law and Intellectual Property Department
Lanxess Corporation
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EXAMINER	
KOSACK, JOSEPH R	

ART UNIT	PAPER NUMBER
1626	

MAIL DATE	DELIVERY MODE
06/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,995	BUCHHOLZ ET AL.	
	Examiner	Art Unit	
	Joseph R. Kosack	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-10 and 12 are pending in the instant application.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09 April 2008 has been entered.

Previous Claim Rejections - 35 USC § 103

Claims 1-10 and 12 were previously rejected under 35 U.S.C. 103(a) as being unpatentable over Rauchschwalbe et al. (US PGPUB 2001/0034453) in view of Merz et al. (*Journal fur praktische Chemie, 1996*, 672-674).

Applicant has traversed the rejection on the grounds that the '453 application does not disclose discharging the product from the reaction zone in the gaseous form, that Merz et al. teaches away from reacting without a solvent, and that there are in fact concerns about local overheating since the process without a solvent had a lower yield than the one with solvent.

The Examiner respectfully disagrees. Firstly, Rauchschwalbe et al. do in fact teach discharging the product in the gaseous form by the distillation. Rauchschwalbe et al. specifically state that the product was "distilled off" in Example 4 cited by the Examiner. This means that the product was the one distilled. It seems strange that the

Applicant argues that the solvent is distilled off when the solvent boils at over 100° C more than the product (285° C for solvent, 100-102° C for 3,4-dimethoxythiophene, and 140-144° C for 3,4-ethylenedioxythiophene.) Secondly, Merz et al. does not teach the use of the catalyst in the process. Therefore, a comparison of reaction yields cannot conclude whether it is the lack of solvent or lack of catalyst that dropped the yield. It also cannot be concluded whether the lack of a solvent created local overheating by looking at the yields by themselves as the lack of solvent is not the only variable between the two processes. Therefore, Applicant's arguments have been considered, but were not found to be persuasive. The rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Rauchschwalbe et al. (US PGPUB 2001/0034453) in view of Merz et al. (*Journal fur praktische Chemie, 1996*, 672-674).

The instant application is drawn to a process for decarboxylating 3,4-ethylenedioxythiphene-2,5-dicarboxylic acid thermally with the aid of copper carbonate as a catalyst. The process forgoes any solvent and is set up to proceed in a continuous process.

Determination of the scope and content of the prior art (MPEP §2141.01)

Rauchschwalbe et al. teach a process for decarboxylating 3,4-dimethoxy-2,5-dicarboxylic acid thiophene by heating around 140° C in a sulfolane solvent in the presence of copper carbonate. See Example 4, page 3, paragraphs 47 and 48.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

Rauchschwalbe et al. do not teach the process without a solvent, the 3,4-ethylenedioxy instead of the 3,4-dimethoxy thiophene, and the details of the continuous process.

Finding of prima facie obviousness--rational and motivation (MPEP §2142-2413)

Merz et al. teach the process for decarboxylating without the use of a solvent. See page 673, column 2. Additionally, 3,4-dimethoxythiophene and 3,4-ethylenedioxythiophene would be obvious variants for the decarboxylation reaction because they are not modified in the reaction and therefore do not play a role in the reaction. A reaction that would work for one would be expected to work for the other. Finally, the courts have consistently ruled that the use of a continuous method vs. a batch process is nonobvious. See In re Giolito, 188 USPQ 645. Therefore, the exact details of the mechanics to carry out the continuous version of a batch process would be obvious to those of skill in the art of industrial scale processes with a reasonable expectation of success. The motivation to combine the references is that performing a reaction without a solvent is cost-effective and leads to a less toxic or more green process.

Thus, the claimed invention as a whole was *prima facie* obviousness over the combined teachings of the prior art.

Conclusion

Claims 1-10 and 12 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph R. Kosack whose telephone number is (571)272-5575. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/REI-TSANG SHIAO /
Primary Examiner, Art Unit 1626

/Joseph R Kosack/
Examiner, Art Unit 1626